

CLAIMS

A1 1. A method for performing channel configuration in a cellular radio network for office use located in the operating area of a macro cell network, **characterized by**

5 (210) selecting as the channel to be tested a logical control channel to be transmitted on the physical channel of a macro cell in the macro cell network,

(215) directing a base station of the cellular radio network for office use and terminals within the coverage area of the base stations of the cellular radio network for office use to use the channel to be tested,

10 (220) establishing by remote control a connection between two or more terminals through base stations serving the terminals on the channel being tested and making a measurement report on the quality of the connection,

15 (232) selecting as the channel to be tested the next control channel of a macro cell of the macro cell network until the control channels of all desired macro cells have been tested,

(235) determining on the basis of the measurement reports the channels whose use guarantees the best range in the cellular radio network for office use,

20 (245) directing the base stations of the cellular radio network for office use to use the channels guaranteeing the best range.

2. A method as claimed in claim 1, **characterized** in that the macro cell network and the cellular radio network for office use are controlled from the same location.

3. A method as claimed in claim 1, **characterized** in that the macro cell network and the cellular radio network for office use are synchronised with each other.

4. A method as claimed in claim 1, **characterized** in that a BCCH (broadcast control channel) is used as the control channel of the macro cell network.

30 5. A method as claimed in claim 1, **characterized** in that office base stations are used as the base stations of the cellular radio network for office use.

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6. A method as claimed in claim 1, **characterized** that mobile phones are used as the terminals.

7. A method as claimed in claim 1, **characterized** in that a threshold value that the connection quality must meet is used in evaluating the quality of the connection.

8. A method as claimed in claim 7, **characterized** in that a bit error ratio is used as the threshold value.

9. A method as claimed as claim 1, **characterized** in that the terminal controller of the cellular radio network for office use, controlling the operation of the terminals, is controlled through a data network connected to the cellular radio network for office use.

10. A method as claimed in claim 1, **characterized** in that the channel configuration of the cellular radio network for office use is performed when building the cellular radio network for office use.

11. A method as claimed in claim 1, **characterized** in that the channel configuration of the cellular radio network for office use is performed at regular intervals.

12. A method as claimed in claim 1, **characterized** in that the physical channel of a macro cell is a time-slot of a radio frequency, and the logical control channel of the macro cell is directed to be transmitted at its time through each time-slot of said frequency.

13. A cellular radio network comprising one or more macro cell base stations (302A to 302G), each coverage area being a macro cell (102) and the macro cells (102) forming a macro cell network; a cellular radio network for office use (300) operating in the operating area of the macro cell network, which cellular radio network for office use comprises at least one base station (304A to 304D) and at least one terminal (406) in radio connection with the base station,

characterized in that

the cellular radio network also comprises a controller (412) co-ordinating the channel configuration, the controller (412) comprising means for selecting as the channel to be tested a logical control channel to be transmitted on a physical channel of the macro cell (102), means for directing the base station (304A to 304D) of the cellular radio network for office use (300) to use the channel to be tested, means for establishing by remote control a connection between two or more terminals (406) through the base

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stations (304A to 304D) serving the terminals (406) on the channel being tested, means for making a measurement report on the connection quality, means for selecting as the channel to be tested the next control channel of a macro cell (102) until the control channels of all desired macro cells (102) have been tested, means for determining on the basis of the measurement reports the channels whose use guarantees the best range in the cellular radio network for office use (300), and means for directing the base stations (304A to 304D) to use the channels guaranteeing the best range.

10 14. A cellular radio network as claimed in claim 13, **characterized** in that the cellular radio network comprises a network management system for managing the macro cell network and the cellular radio network for office use.

15 15. A cellular radio network as claimed in claim 14, **characterized** in that the network management system is arranged to synchronise the cellular radio network and the macro cell network.

16. A cellular radio network as claimed in claim 13, **characterized** in that the control channel of the macro cell network is a BCCH (broadcast control channel).

20 17. A cellular radio network as claimed in claim 13, **characterized** in that the base stations of the cellular radio network for office use are office base stations.

18. A cellular radio network as claimed in claim 13, **characterized** in that the terminals are mobile phones.

25 19. A cellular radio network as claimed in claim 13, **characterized** in that the controller is arranged to use in evaluating the quality a threshold value that the connection quality must meet.

20. A cellular radio network as claimed in claim 19, **characterized** in that the controller is arranged to use a bit error ratio as the threshold value in evaluating the quality of the connection.

30 21. A cellular radio network as claimed in claim 13, **characterized** in that the cellular radio network comprises a data network for transmitting information in the cellular radio network and a terminal controller for controlling the terminals, and that the controller is arranged to control the terminal controller through the data network.

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AI 22. A cellular radio network as claimed in claim 13, **characterized** in that the controller comprises means for performing channel configuration when building the cellular radio network.

5 23. A cellular radio network as claimed in claim 13, **characterized** in that the controller comprises means for performing channel configuration of the cellular radio network at regular intervals.

10 24. A cellular radio network as claimed in claim 13, **characterized** in that the physical channel of the macro cell is a time-slot of a radio frequency, and the logical control channel is directed to be transmitted at its time through each time-slot of said frequency.

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